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ABSTRACT

This report summarizes a project designed to develop vocational educational programs and services for educationally disadvantaged and physically handicapped students at Fresno City College, California. The introduction provides an overview of the two phases of the project: phase I, a needs assessment; and phase II, curriculum development and coordination of services for five vocational programs (automotive mechanics, electronics, licensed vocational nursing, registered nursing, and office occupations). The second section presents two sets of materials: (1) a mission profile (flow chart) of the major functions proposed to be performed during phase II; (2) and the chronicle (specific steps) and summary of the functions actually performed during phase II. It also provides a time-line schedule showing the time that was required to complete each function. The third section identifies problems encountered during project implementation, how they were solved and recommendations for avoiding similar problems in future implementations. The final section contains an article titled "Towards Educational Responsiveness to Society's Needs: A Tentative Model Achieving the Independent Survival Point". This article describes a utility model based upon three possible referents for defining educational needs. (Reports on the needs assessment, curriculum analysis, guidance programs, and program management, equity, planning, and evaluation are presented in documents CE 019 815-825.) (JH)

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ACKNOWLEDGEMENT

The project director and the project consultants would like to commend the efforts of each working participant in the project (faculty, counselors, staff, students and community members). Collectively, they have invested over 30,000 hours of labor in the name of disadvantaged and/or handicapped vocational education students. In many cases they have made personal sacrifices and they have consistently performed to the highest level of professional standards. "Project: MOBILITY" would neither be completed nor on target without the concerned dedication of these participants.

INTRODUCTION AND SUMMARY

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PROJECT: MOBILITY

INTRODUCTION

Research and Design Project

The Research and Design Project for Disadvantaged and/or Handicapped Students began in 1973. It was undertaken for the purpose of developing vocational education programs and services on the Fresno City College campus that would help bring educationally disadvantaged and physically handicapped students to a competitive level with the general student population. It is expected to continue until 1980 or 1981.

The overall project consists of four phases. Phase I (1974-76) involved a comprehensive need assessment of select disadvantaged and handicapped students. Phase II (1976-78) involved curriculum development, the coordination of services, and the development of student and program audit systems. All of the elements developed in Phase II were directed at reconciling the needs identified in Phase I. Phase III (1978-80) will be the implementation of the changes developed in Phase II. Phase IV (1981) will evaluate how well the overall project objectives have been achieved.

The purpose of the Phase I need assessment was to determine the unique needs and problems disadvantaged and/or physically handicapped students have relative to successfully completing vocational education programs. A team of consultants, representatives of disadvantaged and handicapped groups, educators, psychologists, students, and community leaders worked to identify these needs. They gathered the

required data using standardized academic and psychological tests, existing district studies and personal interviews. They were trying to identify any gaps which existed between "what is" concerning these students vs. "what should be" if they are to succeed in the college's vocational education programs. All identified needs were then prioritized by individual team members. This information was combined with the results of research done by the consultants to form a set of objectives which, when met, would remove the identified needs.

The desired outcome of the overall project was to close the gaps which exist between the disadvantaged and/or handicapped students and the average student at Fresno City College, in each priority area of need. The project was further designed to enable these students to enter society and maintain themselves at their "individual survival point;" i.e., that point where their production of resources is at least equal to their consumption. The detailed summary of the implementation of and results from Phase I can be found in the section of this box marked "Need Assessment."

Phase II of the project had three major parts: curriculum development, coordination of services, and development of student and program audit systems. Teams of teachers, counselors, administrators, and consultants determined the mastery (skills/knowledges/attitudes) required for employment in each of five target vocational education programs. They translated these programs into criterion referenced instructional courses which define what the students need to know, what they need to do, and what level of performance is necessary for them to get and hold a job. The five programs under investigation included Automotive Mechanics, Electronics, Licensed Vocational Nursing, Registered Nursing, and Office Occupations.

Each team then closely analyzed all required mastery (skills/knowledges/attitudes) to identify where problems were being encountered by the students and why these problems were being encountered.

The teams assessed each problem to answer two major questions: 1) what contribution did the student make to creating the problem? 2) what contribution did the methods or media of instruction make to creating the problem?

Some major student contributions to the problems identified included: 1) lack of required basic skills, 2) inability to cope with the reading requirements, 3) personality difficulties, 4) emotional troubles, 5) cultural differences, 6) inability to transfer knowledge from lecture to actual application, and 7) an inability to relate lab experience to classroom theory.

Some major instruction related contributions to the identified problem areas included: 1) learning steps that were too large for the students, 2) some materials used were beyond the abilities of the students, 3) methods of instruction didn't match the learning styles of the students, 4) students weren't being given sufficient practical application of what they were learning, 5) some required facilities or equipment were limited, and 6) there was a high priority need to more effectively respond to the unique affective domain needs of students.

Both student and instruction related contributions to the problems were then prioritized by each team according to how crucial they were in the total learning sequence, how crucial they were to mastery of key concepts, and which should be addressed first, given limited resources. Program strategies as well as student services were then developed to eliminate the identified problems.

Each of the five design teams identified alternative instructional methods and media which could be used to match the learning style of the target learners and eliminate the mastery problem areas. These alternatives were then translated into specific recommendations for change in the instructional methods and media of the five target programs.

Some common recommendations that came from all teams were: 1) the strengthening of remedial programs in the basic skills areas, 2) the creation of or expanded use of "hands-on" simulations or practice in the skills required of each program, 3) the creation of or acquisition of individualized audio-visual sequences that both reinforce the critical elements of mastery in the problem area and allow the student to review these points as frequently as required, and 4) intensified attention by the college to not only the academic but also the personal problem areas that contribute to student failure.

The specific recommendations of each team and the detailed analysis that lead to these conclusions can be found in the section of this box marked "Curriculum Analysis." The materials developed by each team have been separately bound. Each booklet contains both an identification of the steps taken by each team and the products they produced by taking those steps.

In response to the recurrent need for services to support the affective or feeling side of the student, an intensive counseling and guidance program called "The Extended Family" was developed. The Extended Family was designed by people who have shared similar life experiences to those encountered by the target students. Further, these people have survived the negative aspects of that life experience and succeeded in spite of them.

The Extended Family designers came from most ethnic groups and were either educators, counselors, students, or community members. The Extended Family they developed is an innovative approach to helping the students help themselves to achieve their occupational/educational objectives. The details of the Extended Family can be found in the section of this box marked "Counseling and Guidance."

The function of program management was approached with the same degree of rigor and thoroughness as was the process of curriculum analysis. A systematic process for Planning, Managing and Evaluating each program was applied throughout the project.

This approach has been applied from the very beginning of this project. Specific management implementation plans were developed for the Need Assessment (see pages 3-11 of the booklet in the Need Assessment section of this box); for the implementation of Phase II (see pages 10&11 in this booklet); for the implementation of the Extended Family (see pages 45-68 in the Counseling and Guidance section of this box); for assuring continuing compliance with affirmative action and sex fairness legislation (see the Management Plans section of this box; and, finally, for district-wide coordination of all vocational education programs (also in the Management Plans section of this box). An overview of the systematic planning, management and evaluation process used can be found in the introduction to the management plans included in the section of this box marked "Management Plans."

Coordination of the programs and services will be further facilitated by the employment of computer programs that have been obtained for the Project. A student identification system known as SAM (Student Accountability Model) was

obtained from Los Angeles City College and modified for the project's use. SAM provides a means of identifying vocational education students by their majors through the utilization of computer services. In addition, it identifies all disadvantaged and physically handicapped students in all programs. The SAM model also includes a long-range follow-up procedure to track students once they leave the college and evaluate the degree to which the college prepared them for their occupations. The SAM system has been in full operation since 1974 and the results of the first major follow-up survey are now being tabulated and evaluated. A detailed explanation of the SAM system can be found in the section of this box marked "Evaluation and Audit."

In addition to SAM, three other computer systems will be employed by this project. A system to monitor the fiscal portion of the project was developed; a system to evaluate the degree to which the students, programs and total project are achieving their outcomes has been designed, but is yet to be programmed; and a system to determine the reading difficulty of instructional materials (STAR-Simple Test Approach for Readability) was acquired from General Motors Corporation. All are parts of this project and each is presented in detail in the section of this box marked "Evaluation and Audit."

The combined materials in this box represent our best effort to develop a student support system that is responsive to the total student. It has been designed to anticipate and provide each student with the highest probability of achieving his/her occupational objectives.

In the remaining pages of this booklet you will be provided with a chronicle and summary of all of the steps we have taken to complete Phase II of our project,

pages 9-15. You will also be provided with a goal-free evaluation, pages 17-31, which identifies the problems we encountered during implementation, how we solved them and our recommendation on how to avoid similar problems in future implementations. Finally, you will find an article, pages 33-38, describing the external referent against which we designed our total project; i.e., giving students the skills, knowledges and attitudes required for them to successfully enter the job marketplace and, as a minimum, achieve their "independent survival point."

We have attempted to sufficiently document our efforts to make their replication on other campuses feasible. Each of the booklets included in this box is completely self-contained. Each should be able to be either individually implemented, implemented with selected other parts of the project or implemented with all other project parts.

We hope that our work will be of assistance to those seeking to achieve objectives similar to ours with disadvantaged and/or handicapped vocational education students.

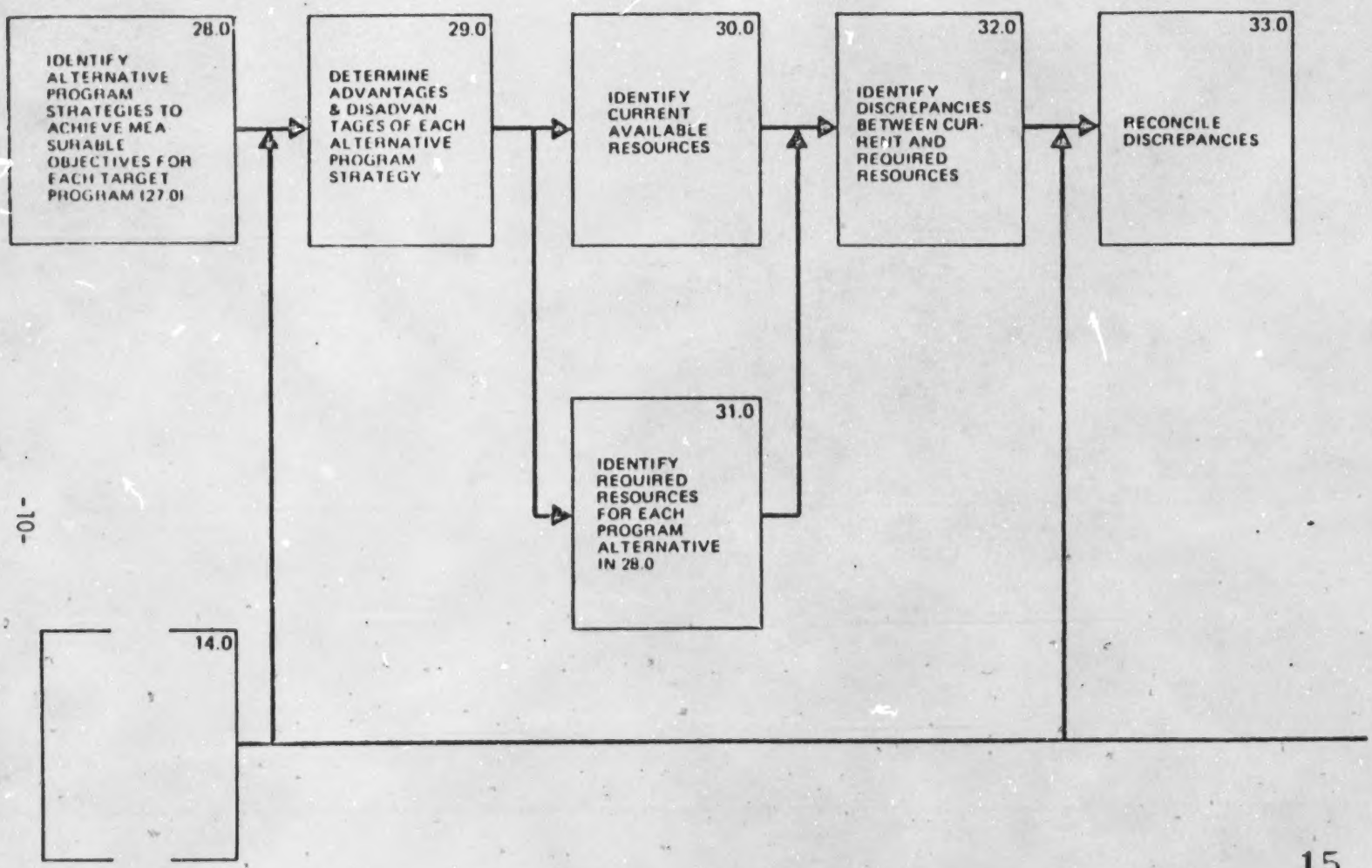
Respectfully submitted,
THE FRESNO CITY COLLEGE RESEARCH AND DESIGN PROJECT

CHRONICLE AND SUMMARY OF PHASE II

On the following pages you will be provided with two separate, yet closely related documents. The first is the mission profile of the major functions proposed in 1976 to be performed during Phase II. These functions, 28.0 through 38.0, were the basis for our original proposal to the U.S.O.E. The second set of materials is the chronicle and summary of the functions actually performed during Phase II, 1976-78.

The chronicle and summary details, in chronological order, the specific steps taken to achieve the original mission profile. It also provides a time line schedule showing the time that was required to complete each function. The time lines presented reflect the actual time taken by all working committees. Exact dates of completion for specific steps varied somewhat from group to group; however, the same starting and completion dates were shared by all groups.

It is hoped that this chronicle and summary will help document the steps taken in Phase II of this project; and will assist other institutions in realistically projecting the time required to complete similar efforts.



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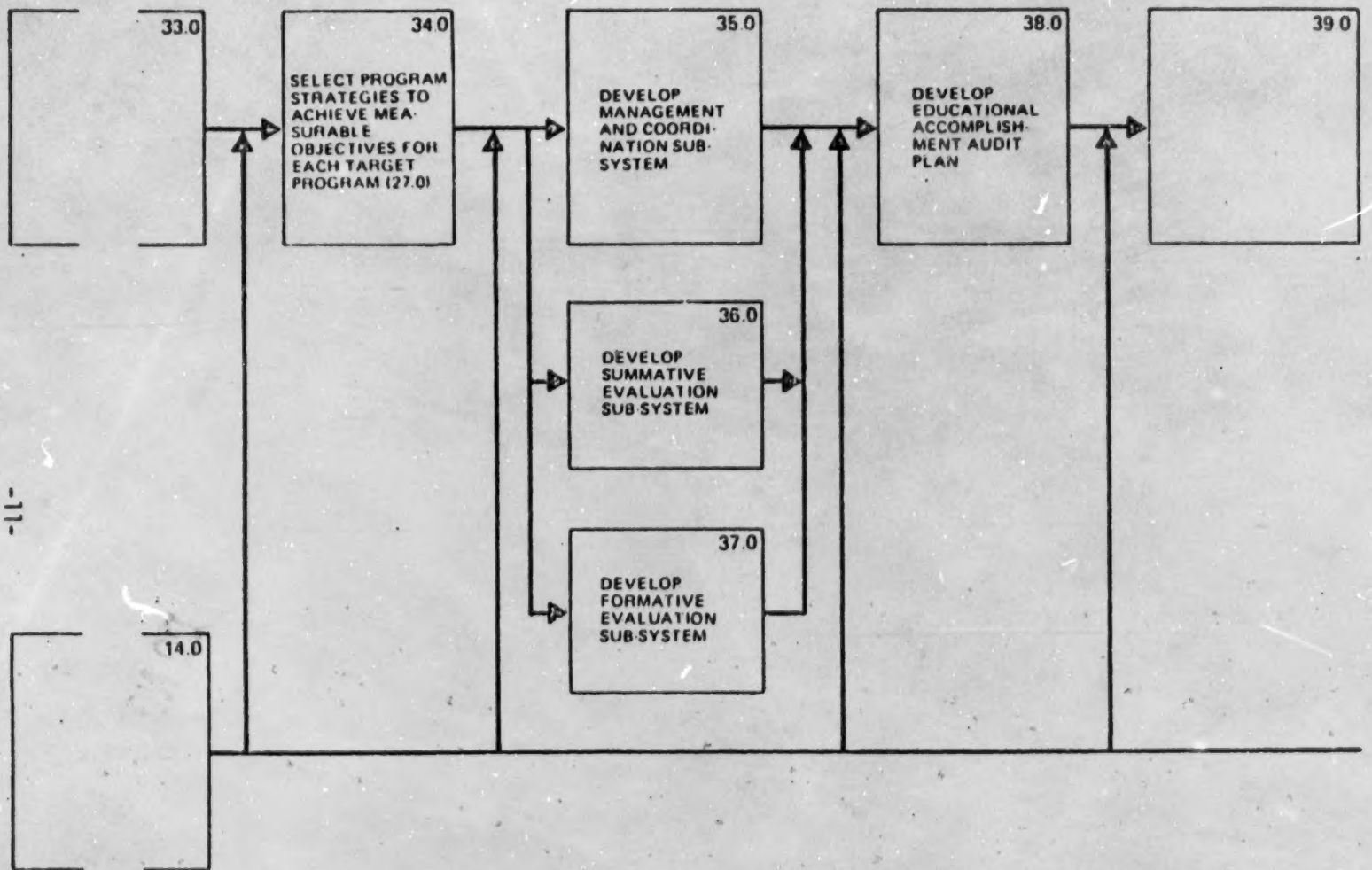

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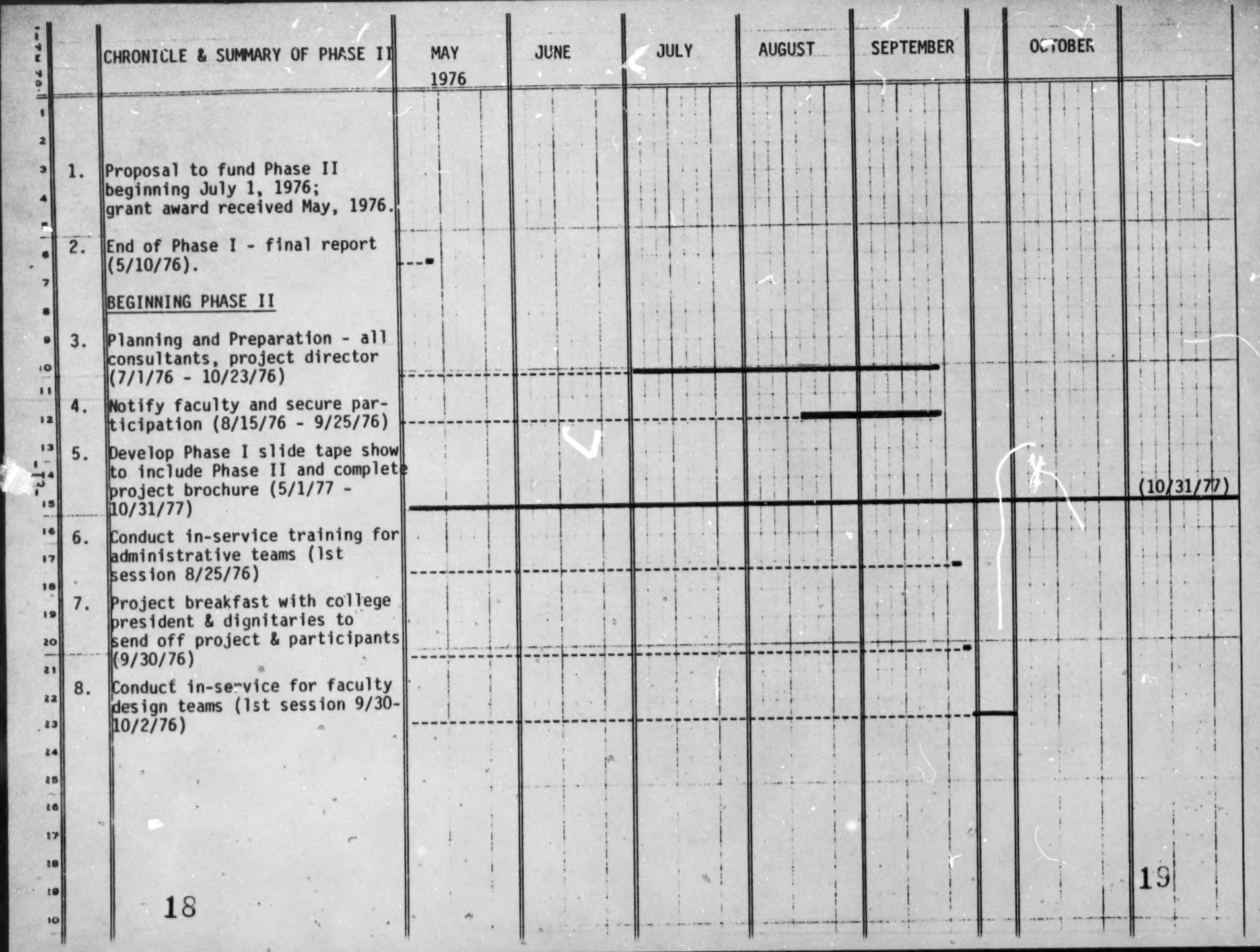
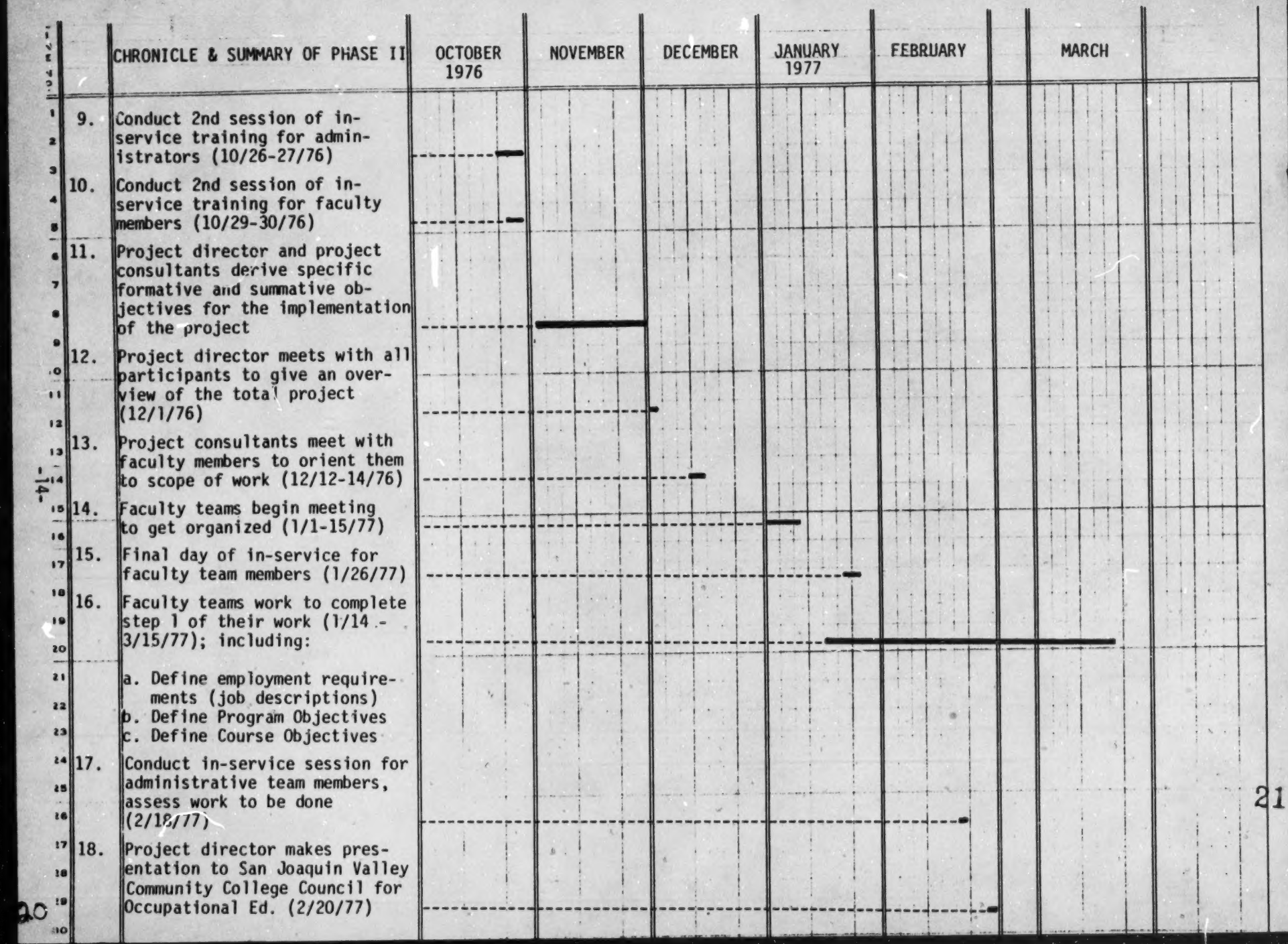
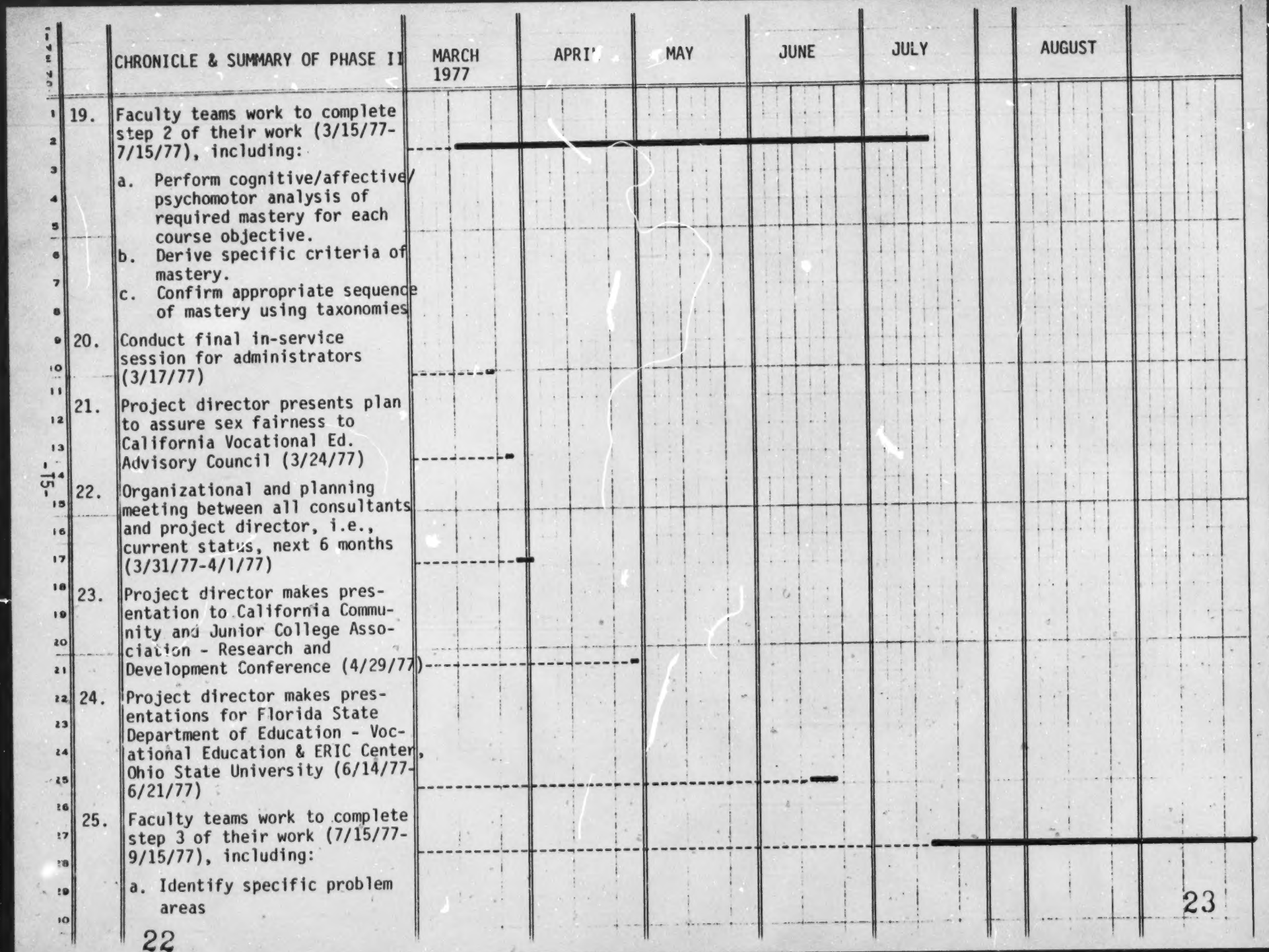
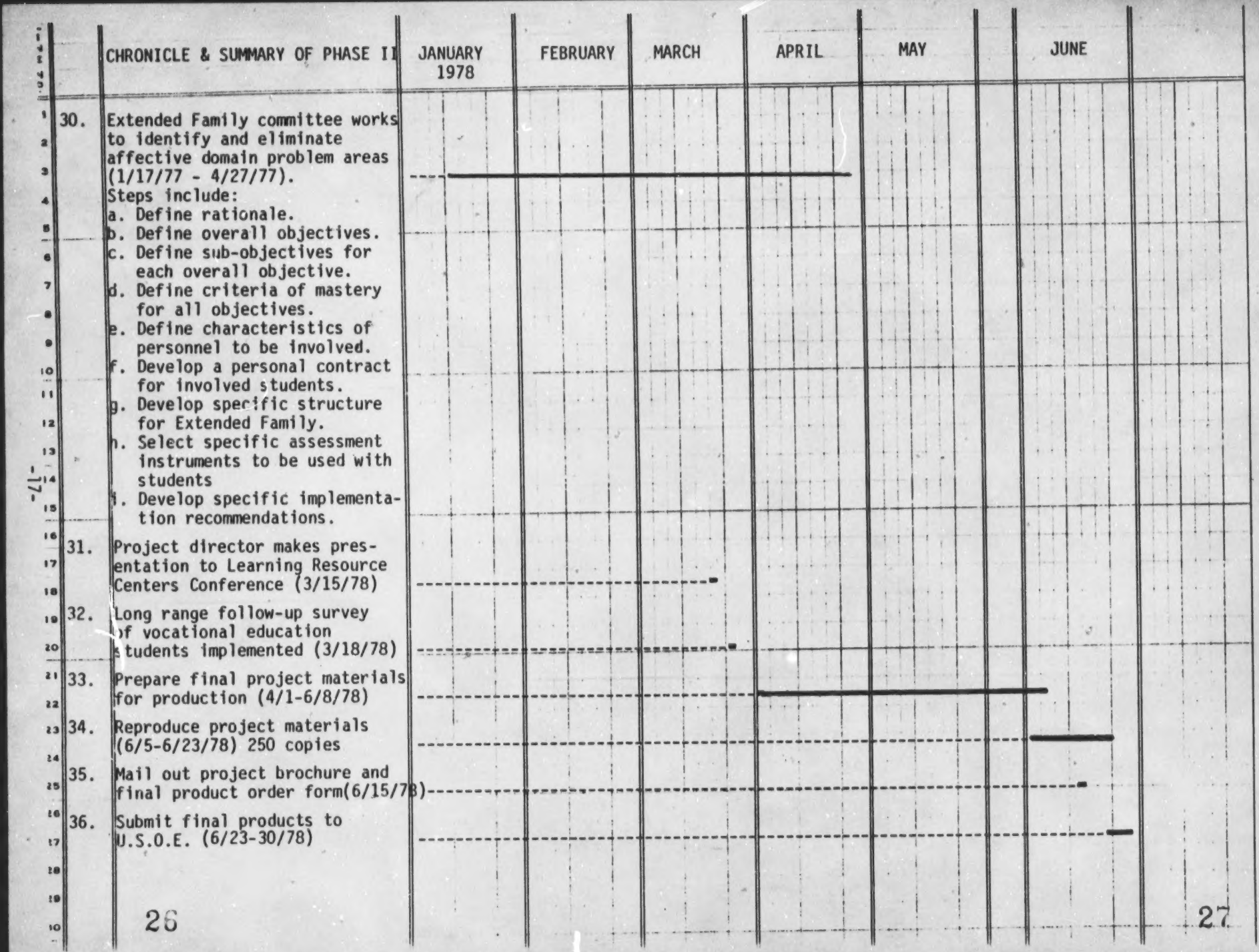

CHRONICLE & SUMMARY OF PHASE II
MAY
1976
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
1. Proposal to fund Phase II beginning July 1, 1976; grant award received May, 1976.
2. End of Phase I - final report (5/10/76).
BEGINNING PHASE II
3. Planning and Preparation - all consultants, project director (7/1/76 - 10/23/76)
4. Notify faculty and secure participation (8/15/76 - 9/25/76)
5. Develop Phase I slide tape show to include Phase II and complete project brochure (5/1/77 - 10/31/77)
(10/31/77)
6. Conduct in-service training for administrative teams (1st session 8/25/76)
7. Project breakfast with college president & dignitaries to send off project & participants (9/30/76)
8. Conduct in-service for faculty design teams (1st session 9/30-10/2/76)


CHRONICLE & SUMMARY OF PHASE II
OCTOBER 1976
NOVEMBER
DECEMBER
JANUARY 1977
FEBRUARY
MARCH
9. Conduct 2nd session of in-service training for administrators (10/26-27/76)
10. Conduct 2nd session of in-service training for faculty members (10/29-30/76)
11. Project director and project consultants derive specific formative and summative objectives for the implementation of the project
12. Project director meets with all participants to give an overview of the total project (12/1/76)
13. Project consultants meet with faculty members to orient them to scope of work (12/12-14/76)
14. Faculty teams begin meeting to get organized (1/1-15/77)
15. Final day of in-service for faculty team members (1/26/77)
16. Faculty teams work to complete step 1 of their work (1/14 - 3/15/77); including:
a. Define employment requirements (job descriptions)
b. Define Program Objectives
c. Define Course Objectives
17. Conduct in-service session for administrative team members, assess work to be done (2/18/77)
18. Project director makes presentation to San Joaquin Valley Community College Council for Occupational Ed. (2/20/77)


CHRONICLE & SUMMARY OF PHASE II
MARCH 1977
APRI'
MAY
JUNE
JULY
AUGUST
19. Faculty teams work to complete step 2 of their work (3/15/77-7/15/77), including:
a. Perform cognitive/affective/psychomotor analysis of required mastery for each course objective.
b. Derive specific criteria of mastery.
c. Confirm appropriate sequence of mastery using taxonomies
20. Conduct final in-service session for administrators (3/17/77)
21. Project director presents plan to assure sex fairness to California Vocational Ed. Advisory Council (3/24/77)
22. Organizational and planning meeting between all consultants and project director, i.e., current status, next 6 months (3/31/77-4/1/77)
23. Project director makes presentation to California Community and Junior College Association - Research and Development Conference (4/29/77)
24. Project director makes presentations for Florida State Department of Education - Vocational Education & ERIC Center, Ohio State University (6/14/77-6/21/77)
25. Faculty teams work to complete step 3 of their work (7/15/77-9/15/77), including:
a. Identify specific problem areas
22
23

	CHRONICLE & SUMMARY OF PHASE II	AUGUST 1977	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY 1978
25.	Step 3 (continued) b. Define the specific causes of and contributions to the problems. c. Prioritize problem areas for attention.	———	———				
26.	Faculty teams work to complete step 4 of their work (9/15/77 12/1/77), including: a. Translating each problem into a terminal performance objective. b. Deriving criterion measures for each objective. c. Analyzing the mastery requirements for each objective. d. Identifying appropriate methods and media to achieve required mastery & eliminate problem.	- - - - - - - - - -	———	———	———		
27.	Project director makes presentation to Community College Vocational Education Deans Conference (10/15/77)		- - - - - - - - - -	- - - - - - - - - -			
28.	Project director makes presentation to California Community & Junior College Association Annual Conference (11/6-8/77)		- - - - - - - - - -	- - - - - - - - - -	———		
29.	Faculty teams work to complete step 5 of their work (12/1/77 - 12/16/77), including: a. Formulating comprehensive recommendations which, if implemented, eliminate the identified problems		- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -	———	


CHRONICLE & SUMMARY OF PHASE II
JANUARY 1978
FEBRUARY
MARCH
APRIL
MAY
JUNE
30. Extended Family committee works to identify and eliminate affective domain problem areas (1/17/77 - 4/27/77).
Steps include:
a. Define rationale.
b. Define overall objectives.
c. Define sub-objectives for each overall objective.
d. Define criteria of mastery for all objectives.
e. Define characteristics of personnel to be involved.
f. Develop a personal contract for involved students.
g. Develop specific structure for Extended Family.
h. Select specific assessment instruments to be used with students
i. Develop specific implementation recommendations.
31. Project director makes presentation to Learning Resource Centers Conference (3/15/78)
32. Long range follow-up survey of vocational education students implemented (3/18/78)
33. Prepare final project materials for production (4/1-6/8/78)
34. Reproduce project materials (6/5-6/23/78) 250 copies
35. Mail out project brochure and final product order form(6/15/78)
36. Submit final products to U.S.O.E. (6/23-30/78)

GOAL-FREE EVALUATION

PHASE II, RESEARCH AND DESIGN PROJECT

FRESNO CITY COLLEGE

In implementing a developmental project of this magnitude, it is not unusual for the project to change somewhat from the originally proposed plans due to the influences of unforeseen events on the implementation process. This project was no exception. The purpose of this goal-free evaluation is to identify those "unforeseen variables" and describe the necessary changes that were made in the project because of their impact on the implementation process.

This goal-free evaluation lists each of the products promised in the original proposal and discusses the major changes made in product development and delivery. It should be noted that each product promised in the original proposal has been delivered. In addition, certain products were developed which exceed what was promised.

This report will first describe any difficulties encountered in implementing Phase II of our project; it will then define how adjustments were made to compensate for these difficulties; and finally, identify recommendations that could help eliminate these difficulties for future implementors of efforts similar to our Research and Design Project.

INSTRUCTIONAL PROGRAMS

In the original proposal, seven instructional programs were selected for curriculum analysis to identify and remove problem areas for target vocational

education disadvantaged and/or handicapped students. Sixty-two faculty members were invited to participate in the analysis of these seven programs. As it turned out, however, substantially fewer than anticipated faculty members actually participated in the project.

The first phase of faculty involvement included training in the use of a systematic approach to the analysis of instructional programs. Only thirty-one faculty members completed this training. Several factors intervened to produce lower than expected faculty participation. Besides the usual problems of faculty teaching loads, other college-related commitments, and reluctance to innovate etc. a new law in California influenced this project. Collective bargaining in California colleges became a reality at the beginning of the project. Many faculty members who were originally committed to the project felt that with the advent of collective bargaining, voluntary participation would be counter-productive to the best interests of faculty members come bargaining time. The old rules governing collegial relationships no longer applied, and the new rules were not yet developed and agreed upon. A wait-and-see attitude prevailed. Therefore, to participate in a project which was essentially voluntary was seen as untimely and unwise, given the political climate of uncertainty.

Virtually all of the faculty members from two of the originally proposed seven programs decided not to participate in the project. Because of this, it was necessary to reduce the number of occupational areas to be analyzed by the project to five programs which still had sufficient faculty involvement to proceed. The funding agency was notified of this change and approval was secured.

During the second quarter of the project, six of the 31 remaining faculty members participating in the project dropped out--primarily because of either the magnitude of work involved, an unwillingness to work as required, a disbelief that their efforts would result in any change taking place, or other personal reasons. Five new faculty members were recruited, however, bringing the number of instructors back to thirty. Later, nine of these thirty dropped out, and a stable twenty-one instructors continued with the project until completion.

Because the project had to be reduced from seven to five programs, and instructor involvement diminished from 62 to 21 actual working participants, major readjustments were necessary. More consultant time was necessary to make up for the lack of instructor participation. Once the reorganizations were completed, and new schedules for production developed, instructional program development proceeded on schedule, with one exception. The Office Occupation Program started about three months behind all other groups. This was because all but one of the original committee members from that division had dropped out. New faculty participants, therefore, had to be recruited to replace those who had dropped out. This revitalizing of the Office Occupations Committee was accomplished, but at the price of approximately 90 working days.

Another problem surfaced once the committed and involved faculty members began working. Originally, each instructional team was to have been made up of eight or nine members, the majority of whom were to have been subject matter experts in the area being assessed. With the tremendous dropout rate that had occurred, each team was left with from three to five members; and not all of these were subject matter experts in the areas they would be assessing. This meant that

committee members had a much larger amount of work to accomplish individually. It also meant that a great number of committee members did not have the subject matter expertise required to quickly analyze a given vocational area and pin point the elements of mastery that historically produced problems for the students. This significantly slowed the pace at which the committees were able to complete their required tasks. Increased support from the consultants was used to partially compensate for this problem, but the effect of the loss of expert faculty members in the committees was still evident. In addition to increased consultant involvement, work schedules and the scope of work to be completed by each working committee had to be revised again.

It was discovered that the first semester of each of the five programs embodied the largest obstacle to continuing student success. This allowed each committee to focus its attention on thoroughly assessing their first semesters and solving the problems identified there. It was the unanimous opinion of all committees that if the problems inherent in the first semesters of their programs could be solved, the student would be over half way home. By the end of Phase II, all courses in all target programs were assessed to identify required mastery, the first semester was assessed to identify problem areas, and solutions to those problems were recommended.

In addition to the instructional products that were promised in the proposal, programs and services were also promised that would be responsive to affective problem areas that contribute to student failure. These affective problem areas were identified by the original needs assessment and from an analysis by the five committees of the affective and socio-cultural factors that contribute

to student failure. The instructors were able to identify problem areas which should be addressed; however, they recommended that psychologists, counselors and people who had shared a similar socio-cultural experience be used to develop specific programs and services to be responsive to these problem areas.

After considering this recommendation, the decision was made to create a separate group to work with the faculty teams to solve the problems in the affective and socio-cultural domains.

A group was formed including select faculty members who had been working with various curriculum committees, faculty from the college psychology department, counselors, and a project consultant with psychological training and background. Because the faculty members from the psychology department chose, eventually, not to participate; and because of availability problems on the part of the consultant, this initial group became inactive.

Dealing with the problems from the affective and socio-cultural domains was clearly shown to be so high a priority, however, that a second committee lead by a different consultant was established. This committee began its work relatively late in the project. It was made up of educators, counselors and community members from the Native American, Black, Chicano and White communities. Taking specifications derived from the need assessment, the instructional teams, and their own personal experience; this committee developed a student support system which they came to call the Extended Family. This Extended Family addressed all affective areas identified for attention and a number that neither the need assessment nor the committee work had identified.

In addition to the five instructional teams and the affective outcomes committee, college administrators were also involved in the project. The project called for developing 1) vocational education instructional programs and services for target disadvantaged students and 2) the appropriate coordination and management of these services. College administrators were responsible for these coordination and management plans. Seventeen administrators were trained in the application of systematic planning management and evaluation techniques for program coordination and implementation. Administrator teams were established to work on various components. The chief problem encountered here was the maintenance of momentum. As in most community colleges, the time demands on administrators to maintain the everyday operation of the college were unrelenting. It was difficult for many administrators to free themselves to work on the project. For these and other reasons, most administrators ceased any active involvement in the project. To overcome this lack of involvement, the project director and the community college district contracted with two of the project consultants to develop a district-wide planning process for vocational education that would satisfy both the requirement of the Research and Design Project and the coordination requirement that existed for the total district. This plan was completed and adopted. The only administrative committee that followed through on its assignment was the committee responsible for developing a long-range student follow-up system. They completed their work and in March, 1978; 2,370 follow-up questionnaires were mailed out to survey students who had left the college and assess the degree to which the college prepared them for their professions. The results of this follow-up will be used to reassess the programs and services offered at the college and to identify possible areas needing revision.

COMPUTER SYSTEMS

The project promised to deliver three computer programs for identifying and tracking vocational education students, programs and services. These included: 1) a student identification system, 2) a student follow-up system and 3) a program/fiscal audit system. The three computer systems initially promised in our proposal were adapted from some developed by several other research projects that had been funded in California. These models were adapted to meet the specific requirements of this project. These systems have been delivered in this project as agreed.

In addition to these programs, a fourth was acquired which can be used to determine the level of reading difficulty for instructional materials presently used in the five target vocational education programs. This is STAR (Simple Test Approach for Readability) developed by General Motors Corporation.

The project director was primarily responsible for the development of these products. It was initially intended that he be assisted by the college's computer center and consulting personnel. In the completion of this product, one major problem occurred. Those college personnel with expertise in computer systems who had initially agreed to participate in the development of these programs were invariably involved in other college-related work which kept them from participating as promised. Given this lack of support on campus, the decision was made to make more extensive use of an outside consultant. With the primary responsibility for adaptation/development of the three computer systems now residing with the project director and the outside consultant, local college personnel were used as a supplementary force.

DISSEMINATION PRODUCTS

There were six dissemination products promised and they have been delivered as agreed--with one revision, the project chronicle and summary. Delivered as promised are the following: 1) brochures describing the project, 2) a multi-media presentation describing both Phases I and II of this project, 3) conference presentations describing the current Phase II, and 4) journal articles. The remaining two products, a chronicle and summary of Phase II, were combined into one product for reasons that will be discussed below.

Brochure:

As with other portions of the Research and Design Project, there were difficulties encountered in combining the work necessary to produce the required brochure with the existing workload of the Public Information Division of the college. An off-campus advertising firm was contracted with, therefore, to develop the brochure. This brochure came off the press during the last quarter of 1977. It will have been mailed to every community college in the nation by the end of the project.

Multi-Media Presentation:

No significant problems were encountered in producing the multi-media presentation. Its production was handled by the same advertising firm that produced the brochure. A 20-minute, 231-frame, slide/tape presentation was completed during the last quarter of 1977. The only problem which was encountered was that because of their limited experience in education, the advertising company had trouble writing an acceptable script. This was overcome by hiring a new script writer who was more familiar with instructional system design techniques and could communicate these techniques in terms that a noneducator could understand. The writer delivered a script which met the given specifications and clearly communicated the

work completed in Phases I and II of our project.

Conference Presentations:

Seven conference presentations were made at local, State, and out-of-state levels. The audit report for this project lists these presentations. No significant problems were encountered; generally, the presentations were well received.

Journal Article:

During the second quarter of 1977, a journal article was written to be used as a conference paper. By the end of this project, a revised and updated version of this paper will be submitted to appropriate journals. No significant problems were encountered in this process.

Chronicle: Summary of Phase II:

Originally, the Chronicle and Summary of Phase II were to have been separate documents. The Chronicle was to log the events which occurred during the life of the project and the Summary was to condense the Chronicle into significant milestones. However, after writing this goal-free evaluation, and first drafts of both the Chronicle and Summary, it became apparent that there was a great deal of overlap among the three products. Thus, the decision was made to reduce this overlap by combining the Chronicle and Summary of Phase II into one document. The original purposes are still served--there is only a difference in packaging.

AFFIRMATIVE ACTION AND SEX FAIRNESS PLANS

In order to deliver the Affirmative Action and Sex Fairness Plans, a special ten-person committee was established. Counted among its members were the college president, project director, affirmative action officer, women's center director,

select faculty members, community members and administrators. This committee developed the techniques and criteria for determining the college's compliance with affirmative action and sex fairness legislation. They then applied these criteria and techniques to the college and documented the degree of its compliances.

During this process, an interesting discovery was made by the project director. This discovery was that an institution could comply with legislation in these areas while, at the same time, not achieving the objectives of the legislation. This was true because the legislation primarily focused on completing assessment procedures--not producing actual change or innovation based upon that assessment. The project director and one of the consultants developed, therefore, two separate plans of action. The first detailed the steps that would have to be taken to bring an institution into compliance. The second plan details the steps that must be taken to achieve affirmative action and sex fairness objectives. The two plans, in combination, will achieve both the explicit and implicit objectives of affirmative action and sex fairness legislation.

RECOMMENDATION FOR IMPLEMENTATION BY OTHER INSTITUTIONS

The project achieved all of its objectives and did so within the performance requirements established. That is not to say, however, that things would not be changed "if it was to be done over again." The following recommendations are presented as additions to the existing project design. They are intended to assist future implementors to more effectively and efficiently achieve similar objectives on their campuses. They are not presented in a particular time sequence or priority ranking. All should be considered before attempting to implement a project similar to ours.

1) The level of commitment possessed by all involved people will do more to determine the success or failure of your effort than any other single factor. This includes commitment to both the value of the project itself and to the accomplishment of the project's objective. It is this commitment that translates into the hard work and sacrifice needed to successfully complete such a large undertaking. The securing of this commitment must occur before an institution makes itself accountable for the achievement of its project's objectives.

To help secure this commitment, the following recommendations are made:

a. Secure support and approval from the highest levels possible and from all key personnel below that level.

b. Secure active and visible support from the people identified in "a."

c. Be certain that all involved people are thoroughly in-serviced on the magnitude, complexity, duration, and individual accountability required of the effort. You are much better off with a smaller group of people who are aware of the realities of what must be done than you are with a large group that progressively gets smaller and smaller as the magnitude of the work unfolds, and the semesters come and go.

d. Present the objectives of the project to the total institution and request their assessment of the relevance of what is being proposed. Ask for their revisions and the rationale for any proposed changes.

e. Communicate the objectives of the project to every facet of the institution and invite their participation. Once work begins, be sure to periodically check back with all facets of the institution and share the progress to date.

f. Because of involvement in institutional projects, which resulted in no change, many participants were very pessimistic about their investment of time and energy resulting in anything. There was a continuous requirement to reassure participants that the institution was committed to implementing the recommendation they derived. We recommend that the highest levels of administration openly commit to supporting the implementation of the committee's recommendation. If you cannot provide or secure this commitment, we recommend that you not even begin the effort. For people to invest as much effort as is required to complete the objectives of this project and then have it put on a shelf or in a file would seriously jeopardize their ever becoming involved in an innovative program again.

g. Completing such a project requires a tremendous amount of work. When this work is combined with the everyday responsibilities of a faculty member or administrator, a person can very quickly become overloaded. Anything that can be done to lessen the everyday load of participants should be done.

h. Anything that can be done to dignify the efforts of all involved people should be done. This includes both on-campus and off-campus dignification. In addition, every effort should be made to build a comradery and collaborative spirit between all involved people.

Included in this dignification is as high a rate of pay for project work as possible. This element of pay serves a double purpose. First, it rewards the efforts of participants. Second, it allows the project to establish strict levels of accountability for the completion of required work.

2) This project began with an intensive 7-day training seminar in criterion referenced curriculum design. These days were spread out over a 4-month period. The participants worked in their curricular areas but not specifically on developing the products required for the project. This caused some frustration on the part of participants who were eager to begin dealing with the heart of the project.

We recommend that a change in the format of training take place. We are not recommending a change in the content of training. We are also not minimizing the absolute need for giving all participants in-service training in the skills of criteria referenced curriculum design. What we are recommending is that training take place on a continuing "need-to-know" basis as each group proceeds through the completion of required products. This requires increased and long-term involvement by outside consultants but it would allow participants to immediately begin working with the actual problems focused on by the project. This model of training was utilized with the Office Occupations Committee due to their late entry into the project. It proved very successful. The quality of the products they produced was excellent and they were able to make up the three months head start enjoyed by the other groups.

3) Access to administrators presented a significant challenge. We feel that a critical consideration is WHEN to involve them. The critical functions that they perform should be clearly communicated to them and their commitment to perform the required work secured at the very beginning of the project. They should also be continually informed of the progress of work. Because

their primary role is to determine the best ways of implementing the changes that come out of the project, their involvement should occur after all other groups have completed their work. In this way, they become actively involved only when absolutely required and to accomplish very specific objectives.

4) The quality of the clerical support provided for the working committees is very important. We found that by translating all committee work into a "finished," typed format as it was completed, rather than waiting to do it all at once, was a very effective model. It constantly gave committee members clean drafts to work from. These were revised many times but having the work in this format allowed all participants to have complete up-to-date versions of the committee work. It further freed all committees to continually progress with and refine their work, rather than wasting time and energy rehashing prior steps because all members's materials weren't current.

   The person(s) providing this clerical support should be highly skilled and beyond the clerk typist level. He or she should match the qualifications defined in the job description attached to the Extended Family portion of the Counseling and Guidance section of the project. This person will also prove to be an invaluable aid to the project director.

5) The project director must be at a high enough administrative level in the institution to make the decisions, solve the problems, and bring out the changes necessary to get the job done. He or she must be the most committed person of all involved to achieve the project's objectives; and have the time available to keep the project on track, on schedule and within budget.

6) Budget Format - It is recommended that the budget format be developed according to the accounting system of the fiscal agent. For example, if the College District is going to be that agent, then the budget should be organized according to the object code format used by the District's Accounting Office. This would not only expedite verification of appropriations, encumbrances and expenditures originated by the Project Director's Office and processed by the District's Accounting Office, but it would aid in quickly identifying any discrepancies between the two offices' record keeping.

7) Typewriting Equipment - If the Project will require voluminous quantities of typing as did the Research and Design Project, it is mandatory that only the best typewriting equipment be available for the Project Secretary. Too many hours of delay and frustration can be spent on unreliable equipment. Highly recommended is the IBM Correcting Selectric II (wide carriage) with dual pitch and the capacity for one, one and one-half, and two line vertical spacing.

TOWARDS EDUCATIONAL RESPONSIVENESS TO SOCIETY'S NEEDS: A TENTATIVE MODEL ACHIEVING THE INDEPENDENT SURVIVAL POINT

Roger A. Kaufman*, Robert E. Corrigan and Donald W. Johnson†

(This article was published in 1968)

A utility model based upon three possible referents for defining educational needs is presented. This model postulates that an individual's "value" to his society may be determined by his position on a consumption-production continuum. It is suggested that these dimensions and criteria might be useful to educational planners and designers.

INTRODUCTION

Systematic approaches to identifying and resolving educational problems are coming more to the attention of educators. Contributions of many in this area (1, 2, 5, 7, 8, 10) have indicated the requirement to systematically set objectives, and proceed to solve educational problems with a measurable and valid referent. A System Approach to educational problem solving would require the setting of valid objectives and performance requirements which can serve as criteria for the identification and creation of valid programs of change.

It is fairly simple to identify objectives which while being quite measurable and precise, are at best trivial, and at worst, wrong and misleading. The question of validity in objectives is quite central and critical to the design of valid behavior change programs. The use of incorrect or invalid objectives, no matter how precise, might well be worse than having no measurable objectives at all. The question of validity of objectives, then, should not lead to the renouncing of performance objectives for educational design, but rather to the attention to the data and process by which objectives may be identified.

Frequently curricula found in schools, even objectives framed in performance terms, indicate that content alone has dictated the goal of education or a segment of the curriculum. Other examinations of educational content often reveal an emphasis on the individualization of instruction--perhaps a solution in search of a problem. Can one decide which is more important as the basis and genesis of curriculum--content or the individual? Hardly.

Finn (3) has identified the need for setting objectives in humanistic terms for education while discussing the role of educational technology thus: "Our problem becomes one, not so much how to live with it (instructional technology) on some kind of featherbedding basis, but how to control it so that the proper objectives of education may be served and the human beings remain central in the process."

Hanna offers some further insights which may well be useful in revealing the role and responsibility of education in the area of curriculum design, and perhaps, for determining the overall (or Mission) objective for education. Hanna (4) suggests that the three foci for curriculum are:

1. Subject matter to be taught
2. The child to be educated
3. The society to be served

According to this formulation we need not, even must not, choose the subject-matter content as the sole referent for education, nor would we choose the learner as the only referent for education, but rather must obtain valid objectives for education from the above three elements in integrated concert.

It would seem that the "secret" of being responsive to societal needs, and thus the student needs, would be for educators, curriculum designers and planners to design programs of valid change by proceeding from "What is the nature of the Society to be served" to "What is the nature of the student to be taught" and then to "What is the nature of the knowledge to be taught." To begin with either referent (1) and/or

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referent (2) is to take it for granted that referent (3) has been answered and that referent (1) and referent (2) are valid "givens". This is a questionable assumption, and it is contended that education, if it is to meet its charter, must not take "What is the nature of the society to be served?" as automatically satisfied just by focusing on the learner or on the subject matter content.

This is not to deny the importance of the nature of content to be taught or the importance of the characteristics of the learner to be taught--if we are to bring about learning; these are crucial and critical variables to which instruction must be responsive through valid and functional system design.

What is intended in this paper is to re-emphasize the role and requirements for making the content of learning oriented towards the skills and knowledges that will be required for (1) survival and (2) contribution in the real world that faces the learner when he departs from educational agencies. Valid educational planning and development should be predicated upon Hanna's three referents in the following modification and order of attention:

1. What is the nature of the society to be served (and in which the learner must live)?
2. What is the nature of the learner to be taught?
3. What is the nature of the knowledge to be taught?

A diagrammatic representation of the interrelationship between these three variables is shown in Fig. 1.

Towards Educational Responsiveness to Society's Needs: A Tentative Model

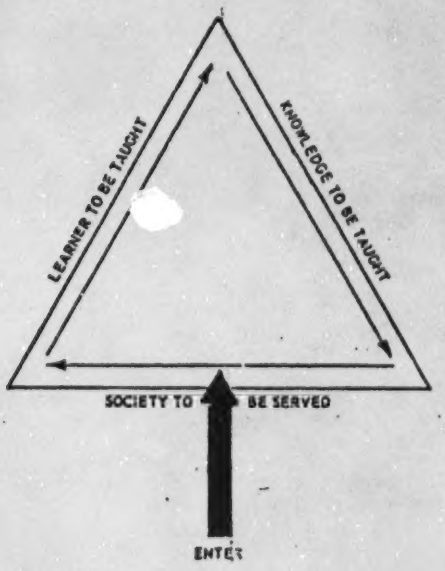

FIG. 1. A diagrammatic representation of the relationship between the three critical referents of curriculum design in education.

Any educational endeavor should be related to assessable goals; ideally clearly stated performance requirements. This basic strategy is found in formalizations of System Approaches and to Sub-system products such as programmed instruction, team teaching, audio-visual aids and the like. In educational system design one must first define the student performance that is to result, then design to achieve that goal as specified. In a system approach, the clear delineation of goals (or objectives, expressed as performance requirements) is required. The educational practitioner must determine his starting referent. Is this referent to be the learner to be taught, the knowledge to be taught or the society in which the individual must serve not only to the benefit of society but to his own satisfaction and survival?

An assumption of this paper is that by far the most important goal of public education is to give citizens the requisite skills and knowledges to survive and

contribute in the operational or real world. It is further assumed that public education is for all the students who are legally able to enroll. Once these assumptions are accepted, then it becomes necessary to set educational objectives from a referent which begins with "What is the nature of the society to be served?" It has been here indicated that to meet valid and functional educational objectives, schools must teach successfully the skills and knowledges required to survive and contribute. However, before one can begin this design task, it is required that operational definitions for the terms "survive" and "contribute" be established. The objective of the balance of this paper, then, is to derive satisfactory objectives for society's intent relative to educational achievements.

Is is not without a degree of humility that such an undertaking is approached. It is intended that others will view this offering in a system sense with the realization that it is but a first attempt to define a generic educational objective, and that others seeing potential in this formulation will modify and improve this initial effort.

THE TENTATIVE MODEL

People enter our world and our culture (the United States) in an extremely dependent state--as neonates. They are completely dependent upon others for their sustenance and survival. As we are able to teach the new society member skills, knowledges, values and attitudes, he hopefully progresses along an existence continuum. This continuum extends from complete dependence to contribution. Let us examine this hypothetical continuum, identify the major milestones on it, and attempt to define operationally the criteria for each of these "bench marks."

Figure 2 presents a model which contains a continuum that might be called "Utility". Review of this figure reveals that at one end of this continuum is "Dependent Survival," the mid-point is "Independent Survival," and anything upward from the center point is defined as "Contribution."

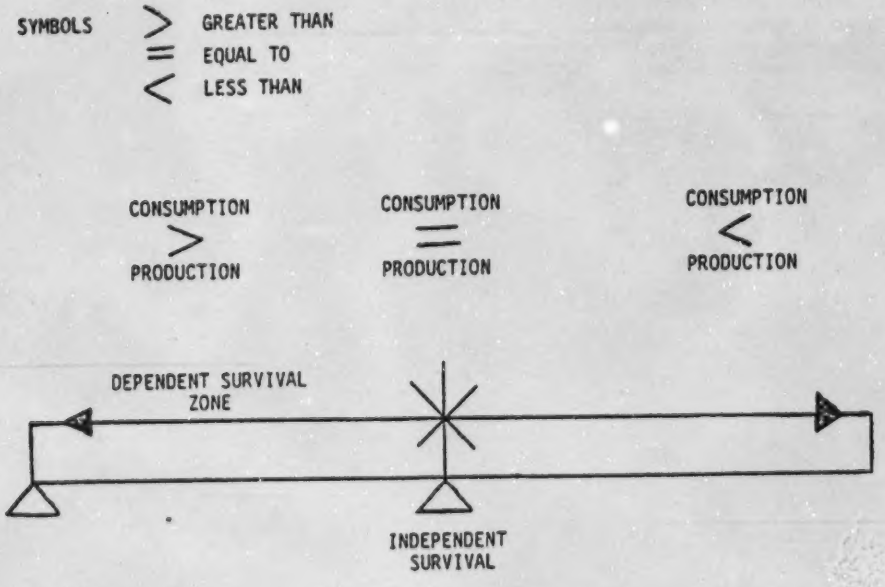

FIG. 2. A proposed continuum of individual utility in our society.

"Dependent Survival" is defined operationally as that which occurs when an organism consumes (C) more than it produces (P).

Dependent Survival: $C > P$

This state of affairs would include the newborn babe, the child in schools, the person on relief or welfare, the anti-social individual that breaks the law by such actions as conversion, thievery, fraud, etc. In this realm, individuals will vary to the extent in which consumption is greater than their production, with perhaps a baby being the extreme of this "Dependent Survival".

"Independent Survival" is defined operationally as the middle point on this continuum, and represents that finely balanced point where an individual produces exactly in equal amounts to that which he consumes.

Independent Survival: $C = P$

This perhaps is characterized by the marginal citizen in our society who holds his own", but does not provide anything over and above that which he consumes. A hypothetical example might be a farmer living on a piece of land and who grows exactly what his family needs to eat, and just enough extra to provide consumables to sustain life.

"Contribution" is the remainder of the continuum, and it is defined operationally by the actions of an individual who consumes less than he produces.

Contribution: $C < P$

Regularly employed adults nearly all fall into this category.

Given that this continuum and its milestones do operationally describe degrees and states of "existence," then it would seem that a reasonable objective for our society would be to have all members reach at least the "Independent Survival" level of existence and as far beyond as possible. The more a citizen contributes over that which he consumes the "better" citizen he might be considered in terms of cultural growth and survival, but the intent is merely to define a "zone" which defines and describes "contribution."*

Thus there is provided a criterion for stating an operational definition for (a) "contribution", (b) several levels or degrees of "survival", and (c) the "first blush" of an objective for society and hence, by derivation, education. Education can establish tangible operational criteria for answering the first question, "What is the nature of and the society to be served in which the individual must live?" A tentative answer from this brief analysis might be "to bring each individual at least to the level of" 'Independent Survival' and, if possible, as far beyond as his capabilities permit given the resources available for educating him, at the point of exit from agencies of education, and for earlier if possible".

There is still at least one more problem to be resolved before this tentative model may be employed: namely, the determination of the "measuring stick" for evaluating consumption and production. There seems to be one in our culture, but unfortunately it sounds much more crass than it really is--the dollar. We can, and even do, attach (for better or worse) dollar values to most things in our society. One may determine cost of welfare programs, cost for buying concert tickets, costs for printing poetry, cost for buying Rembrandt masterpieces. At some time or another a "price tag" is placed on nearly everything, and a basic assumption of our democratic capitalistic system is that the token for exchange for goods and services is money. With a money "yardstick" we can measure consumption and production. It should be

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*While this formulation makes no attempt to define degrees within the "Contribution Zone", future development of this tentative model should include such a derivation of scale properties. Several possibilities exist. One might be to have judges "Q" sort various occupation families or representative occupations relative to degree of "contribution" and use the resulting pooled judgements as scale points. Another possibility suggested by David Campbell, Chico, California PACE Center, is to use occupational families or occupational categories relating to relative amounts of income production or functions in society as criterion points along the "Contribution Zone" axis.

emphasized that the relationship of "contribution" and money is not necessarily a direct one, but a functional relationship where there is correlation (statistical) between two variables without a necessary inference concerning causation.

This proposed model may be conceived as a combined behavioral/economic model which could represent one of an array of possible educational objective models. Thus conceived, this present model could represent one of many criteria models to be invoked in setting valid educational objectives. If, in fact, a number of such models do exist, use of more than one would require selection and weighting of the criteria that they suggest.

It also might be noted that the "zero point" of independent survival as an educational goal or objective is not absolute but could be shifted upon the horizontal axis as society requires. Thus, if economic considerations indicate that production (or contribution) is becoming a surplus or otherwise undesirable, then the societal objective could be shifted from "Production = Consumption or better" downward to some point within the "Dependent Survival" zone. The midpoint is always the same, but the objective data, e.g. standard score of the meridian, changes depending on the society. In this case society (changed perhaps by technological processes) changes the operational skills which determine an individual's placement to the right or left of the midpoint. The mid-point is a function of a social demand, not a characteristic inherent in the individual.

It also should be noted that reference to "the society to be served" does not preclude requirements to change society and its rules and/or expectations. One would suggest that a basic feature of a democratic society and thus a requirement is to bring the demands of society into line with the needs and requirements of its citizens rather than the other way around. The constant analysis of society and its "rules" should even increase the probability of identifying and implementing required social change.

This proposed tentative model merely attempts to provide a tool for summarizing the economic impact of the sum total of individuals upon our society expressed in operationally defined behavior/economic criteria. Further, it should be noted that with this model, an individual could be "contributing" or producing while being in the "Dependent Survival" zone. Placement in one or the other zone is based upon the net relationship between consumption and production not on the fact of either complete consumption or complete production. It is additionally possible that during a lifetime, a single individual could shift between zones several times (such as on and off unemployment compensation).

SUMMARY

This paper has proposed that in education and educational planning that educators, in order to produce valid programs of change, must concern themselves in order, with (1) the nature of and society to be served in which the individual must live, (2) the nature of the learner to be taught, and (3) the nature of the knowledge to be taught. It has been hypothesized that the development of educational programs must not "lock" into one of the levels without considering the requirements of all of the stated operational dimensions. A System Approach to educational problem solving should start with a delineation of requirements placed by society upon members of society, and thus upon education's role in producing citizens who will at least produce as much as they consume. A model is offered for aiding the educational planner and designer in determining where an individual is at any given moment in time on a continuum of "existence." It supplies a crude metric device for determining discrepancies between "what is" and "what is required" (a need), and therefore may serve as a starting referent for deriving valid objectives for educational curriculum.

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